

The Clinic of the Future Automation in Treatment Planning

AAPM Annual Meeting 2019
Automation and Scripting in the Clinic
7/15/2019 1:45-3:45 Room 304ABC

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RADIATION ONCOLOGY



Disclosures

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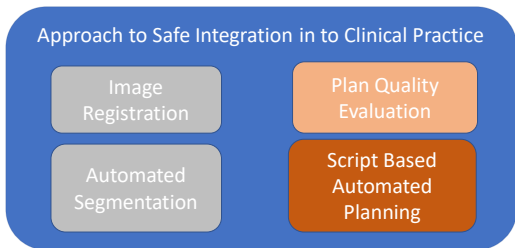


Acknowledgements *Big Data is a group effort*

- | | | | |
|-------------------------|------------------------|----------------------|----------------------|
| Ted Lawrence, MD PhD | James Balter, PhD | Dale Litzenberg, PhD | Sue Merkel |
| Jim Hayman, MD | Jean Moran, PhD | Don Roberts, PhD | Sherry Machnak |
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Be mindful of the whole, when designing approach for each individual component



Beware the half measure

Do you remember "Computers will reduce the amount of paper that we generate"?

- Does the automation application fit into your existing process?
- Do you have to make your clinical process **more complex** to use it?
- Do you have to add equipment/software ?
- Is the equipment/software **interoperable** with your existing system?

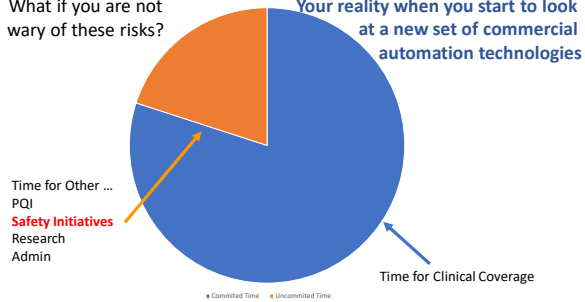
Beware the imperative to choose



Sometimes the right answer is none of the above... for now

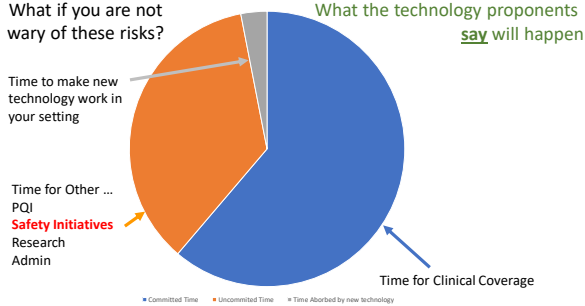
What if you are not wary of these risks?

Your reality when you start to look at a new set of commercial automation technologies



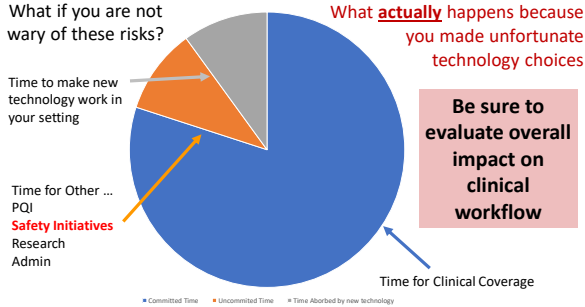
What if you are not wary of these risks?

What the technology proponents say will happen



What if you are not wary of these risks?

What actually happens because you made unfortunate technology choices



Beware the unchecked, easy answer



Near term plan

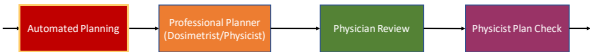
Integrate automation to practice so that it augments your practice quality work flows



This is neutral or reduces risk

Near term plan

Integrate automation to practice so that it augments your practice quality work flows

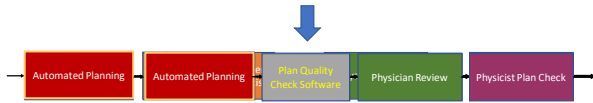


Long Term, with evidence, likely will make sense for some categories of plans

Near Term, without good evidence, risky

Near term plan

Integrate automation to practice so that is augments your practice quality work flows



Plan quality check applications (automated or manual) will be a valuable component for safe implementation of automated planning

Development of Automated Script based planning at University of Michigan

- Complete plan setup as well as optimization
- Statistical DVH based constraints incorporate history
- Overall planning time < 15 min

